

Work Order ID 62908

Wednesday, October 13, 2010 9:04:03 AM

Page 1

Item ID: D350-636-015

Accept

Setup Start

Revision ID:

Item Name: Skidtube STD w/ Training Wearplates, LH

Stop

Start Date: 10/13/2010 Start Qty: 1.00

Cust Item ID:

Required Date: 10/22/2010 Req'd Qty: 1.00

Customer:

Reference:

Approvals:

Process Plan:

Date: 10-10-13

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D4168

A

IIN-D350-636

H

0.00

100



DC

Document Control

DOCUMENT CONTROL

Memo

0.00

Photocopy blue file and type labels per PPP D350-636-015 CHG 001

8/10/12/24

Handwritten signature and date: 10-11-24

Handwritten text: 13627991

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

110

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1- Pick D2600-3 Bent

2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D4168

3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr.

4- Locate DT8330 off of blade fitting bolt holes and drill pilot holes for blade fitting

5- Drill fwd step holes using DT9616. Ensure proper positioning. All holes as per dwg D4168.

6- Drill pilot holes as per Dwg D4168 sheet 4 (D4168-1 details). Drill using drill Jig DT8150 & DT8863A for first side only DT8863B for second side (detail B)

7- Clecko DT8863B on second side of tube and drill pilot holes for detail B.
SECOND SIDE

8- Drill most FWD wearplate hole using DT9678 locating off of 66.54" hole.

9-Open up holes for Detail B to 0.375" (4 holes per side) and blade fitting location holes to 0.500" (total of 4 holes per side) as per dwg D4168. Open up holes for ground handling and detail C to 0.500" (8 holes per side)

10-Open up holes of Detail A to 0.297" (total of 2 holes per side) and .210" (total of 1 hole per side)

10-10-14

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

11-Weld D2744 Cap as per Dwg D4168 and QSI 004. Fill grooves in bend left
from bending as per QSI 004A/R Aluminum Rod batch: ☐ M115778

12-Grind welds flush as per Dwg D4168

120



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

Solve

130



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

Solve

60

W/O:		WORK ORDER CHANGES					
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Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool # Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

140

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

150

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

DP

10-11-4

BE 10-11-4

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Run Start

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160



Skidtubes

Skidtubes

Skidtubes

Memo

0.00

1-Open up holes of Detail C and ground handling to 0.625" (total of 8 holes per side)
as per dwg D4168.2-Open up holes of Detail B to 0.750" (total of 4 holes per side)
as per dwg D4168.

3- Open float hole to 0.500" (4 per side)

Open wearplate holes to size as per dwg (4 holes per sides)

4-Chamfer holes of Detail B, C, ground handling and float holes per dwg D4168
(welding instructions on sheet 8)

5-Deburr and blow out all chips from inside of tube

6- Prepare tube for welding, remove alodine as required.

7-Bond web D2739 in place as per QSI 015

A/R ☐☐☐ Sikaflex-291 batch: 115114 ☐☐☐
exp. date: 12/1/058- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D4168 and D4170-1
& QSI004

(welding instructions on sheet 8)

A/R ☐☐☐ Aluminum Rod batch: 1115778

9- At section AJ-AJ drill out x-bolt spacer to 0.404"

10-11-4

BB 10/11/05

BE 10/11/11

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Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

10-Grind welds flush as per Dwg D4168

11-Spot face ground handling holes section (total of 4 places per side) as per
dwg D4168

BE 10/11/15

12-Deburr holes

BE 10/11/15

170



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

S 10/11/15

Memo

0.00

180



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

S 10/11/15

Memo

0.00

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Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190



HandFinish

Pressure Wash per QSI005 4.3

0.00

=> M 10/14/12

1

Ø

Memo

0.00

Hand Finishing

L Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

200



Powdercoat

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

M115291

Memo

0.00

Powder Coating

START TIME: 9:30

OVEN TEMPERATURE: 320°

FINISH TIME: 10:00

1 BL 10-11-18

210



QC

QC3- Inspect Part Finish

0.00

=> M 10/14/12

1

Ø

Memo

0.00

Quality Control

Inspect for foreign object per QSI 024

W/O:		WORK ORDER CHANGES					
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Stop

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

220

0.00



HandFinishing

HandFinish

Memo

0.00

Hand Finishing

1- Install inserts as per Dwg D4168

230

0.00



HandFinishing

HandFinish

Memo

0.00

Hand Finishing

1-Inspect for Foreign Objects

2-Spray inside of tube with "LPS-3" batch: 12A

3-Install blade fitting D3488-041, wearshoes and ground handling hardware as per dwg D4168

SIKA FLEX 241

BATCH: 1115114

EXP DATE: 11101

4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube

A/R 55-o'ring lube batch: 1114189

5-Coat all exposed fasteners with "LPS Procyon" batch: 1114596

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Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

240

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

S 10/14/24

④

250

Pick Kit

0.00



Packaging

Memo

0.00

Packaging

10/11/24 sf

260

QC4- 100% Inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

*****ensure antiseize is on AN8C21A bolts*****

S 10/14/24

④

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Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

270

0.00



Packaging

Packaging

Memo

0.00

Identify and pack for shipping as per PPPD350-636-015

Location: 78PPP rev: A

280

0.00



QC

QC21- Final Inspection - Work Order Release

Memo

0.00

Quality Control

10/14/24 SF

10/11/24 JF

MF
10-11-24

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Picklist Print

Wednesday, October 13, 2010 9:04:07 AM

Page 1
10

Work Order ID: 62908



Parent Item: D350-636-015



Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 10/13/2010

Required Date: 10/22/2010

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP rev:A 10.09.28 new issue DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN3C34A BOLT		Purchased	No			230	Each	17.0000	1	1		10/11/24	

Location Loc Qty Loc Code

ST353 17

115767 17

AN3C36A BOLT		Purchased	No			230	Each	115.0000	4	4		10/11/24	
---------------------	--	-----------	----	--	--	-----	------	----------	---	---	--	----------	--

Location Loc Qty Loc Code

ST353 115

109771 10

115358 15

115518 40

115882 50

AN3C37A BOLT		Purchased	No			230 (250)	Each	60.0000	1	1		11/5908 10/11/24	
---------------------	--	-----------	----	--	--	--------------	------	---------	---	---	--	------------------	--

Location Loc Qty Loc Code

ST354 60

114761 10

114801 50

W/O:		WORK ORDER CHANGES					
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Required Date: 10/22/2010

Start Qty: 1.00

Required Qty: 1.00

AN3C42A

Purchased No

230

Each

104.0000

1

1



BOLT

Location

Loc Qty

Loc Code

ST354

104

106169

4

106176

100

Manufactured No

230

Each

123.0000

4

4

D3490-1



Cross Bolt Spacer

Location

Loc Qty

Loc Code

LG

123

59424

3

61217

30

62450

90

Manufactured No

230

Each

39.0000

4

4

D3490-3



Cross Bolt Spacer

Location

Loc Qty

Loc Code

LG

39

60294

1

61218

1

62451

37

Manufactured No

230

Each

95.0000

7

7

D3873-1



Bushing

Location

Loc Qty

Loc Code

ST092

40

62197

40

ST093

55

57615

55

Wednesday, October 13, 2010 9:04:07 AM

Shop Packet Print

Page 2

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Required Date: 10/22/2010

Start Qty: 1.00

Required Qty: 1.00

D4154-041

Manufactured No

230

Each

3.0000

1

1



Wearplate Assembly



10/14/20

Location

Loc Qty

Loc Code

FG

3

1363871

X1

62196

3

D4170-1

Manufactured No

230

Each

8.0000

4

4



Bushing



Location

Loc Qty

Loc Code

LG

8

B 63322 4 BERD/11/11

62251

8

D4171-1

Manufactured No

230

Each

0.0000

1

1



Bushing



B62710 10/14/24

MS21043-3

Purchased No

230

Each

2,564.000

5

5



Nut



10/11/24

Location

Loc Qty

Loc Code

FG

76

103691

76

ST301

2488

111383

23

112314

2465

5

W/O:		WORK ORDER CHANGES					
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Required Date: 10/22/2010

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0363R

Purchased

No

230

Each

5,796.000

9



Washer

Location

Loc Qty

Loc Code

ST297

5796

113524

146

113644

150

113889

500

114742

5000

NAS1515H3L

Purchased

No

230

Each

380.0000

4



WASHER

Location

Loc Qty

Loc Code

FG

40

102472

40

ST277

340

111819

94

113362

246

AN960JD816

Purchased

No

250

Each

127.0000

2



1/2" washer, Alum

Location

Loc Qty

Loc Code

ST348

127

106043

127

D2744

Manufactured

No

110

Each

14.0000

1



Cap

Location

Loc Qty

Loc Code

LG

14

59198

14

Wednesday, October 13, 2010 9:04:07 AM

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Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Wednesday, October 13, 2010 9:04:07 AM

Work Order ID: 62908

Parent Item: D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 10/13/2010

Required Date: 10/22/2010

Start Qty: 1.00

Required Qty: 1.00

D2600-3-BENT

Manufactured No

110

Each

17.0000

1

1



Extrusion Bent

Location

Loc Qty

Loc Code

LG

17

61634

7

62594

10

① DP 10-10-14

D2743

Manufactured No

160

Each

214.0000

8

8



Crossbolt Spacer

Location

Loc Qty

Loc Code

LG

214

50281

10

57953

2

59111

95

61844

107

8 BE 10/11/11

D2739

Manufactured No

160

Each

0.0000

1

1



350 I Beam

62688



1

BE 10/11/05

D3490-3

Manufactured No

160

Each

39.0000

4

4



Cross Bolt Spacer

Location

Loc Qty

Loc Code

LG

39

60294

1

61218

1

62451

37

2 BE 10/11/11

BE 62608

2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Wednesday, October 13, 2010 9:04:08 AM

Page 6

Work Order ID: 62908

Parent Item: D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 10/13/2010

Required Date: 10/22/2010

Start Qty: 1.00

Required Qty: 1.00

D3490-1 Manufactured No

160

Each

123.0000

4

4



Cross Bolt Spacer

Location

Loc Qty

Loc Code

LG

123

59424

3

61217

30

62450

90

ALS4-1032-225

Purchased

No

230

Each

4,870.000

4

4



Insert

Location

Loc Qty

Loc Code

PK011

4870

110768

4870

D3492-041

Manufactured

No

230

Each

17.0000

8

8



Plug Assembly

Location

Loc Qty

Loc Code

FP013

17

59114

1

61311

16

AN8C35A

Purchased

No

230

Each

30.0000

1

1



BOLT

Location

Loc Qty

Loc Code

FP

1

110847

1

ST346

29

114442

5

115188

24

Handwritten notes:
3, > BE 10/11/11
10/11/24 sd

Handwritten notes:
y
10/11/24 PTO =>

Handwritten notes:
x2
y6
11/5/60 10/14/24

W/O: 62908		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
10/11/24	230	Assemble D3492-041 Plugs with "O" Rings D2594-3 AB61792	Jed	10/11/24	X8		Goat 24

Part No: D350-636-015 PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

Picklist Print

Wednesday, October 13, 2010 9:04:08 AM

Page 7

Work Order ID: 62908

Parent Item: D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 10/13/2010

Required Date: 10/22/2010

Start Qty: 1.00

Required Qty: 1.00

D3488-041

Manufactured No

230

Each

4.0000

1

1



Blade Fitting Assembly, LH

Location

Loc Qty

Loc Code

FP

1

53915

1

FP007

3

56052

3

AN6C44A

Purchased

No

230

Each

85.0000

4

4



BOLT

Location

Loc Qty

Loc Code

FG

2

103964

2

ST344

83

111649

2

114653

1

114941

75

115030

5

MS21083C8

Purchased

No

230

Each

99.0000

1

1



NUT

Location

Loc Qty

Loc Code

ST303

99

113845

5

114934

3

115594

41

115884

50

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Wednesday, October 13, 2010 9:04:08 AM

Page 8

Work Order ID: 62908

Parent Item: D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 10/13/2010

Required Date: 10/22/2010

Start Qty: 1.00

Required Qty: 1.00

D3631-1 Manufactured No

230

Each

387.0000

8

8



Washer



B63647 10/11/24

Location

Loc Qty

Loc Code

ST072

113

60755

113

ST076

274

52693

206

54388

68

AN960C10L NAS1149C0332 Purchased No

230

Each

29.0000

4

4

R



washer



M115832 10/11/24

Location

Loc Qty

Loc Code

ST245

29

107534

29

D2745 Manufactured No

230

Each

189.0000

8

8



Bushing



10/11/24

Location

Loc Qty

Loc Code

ST023

189

52311

5

59112

4

61203

76

61988

104

AN960C816L NAS1149C0332 Purchased No

230

Each

0.0000

1

1



WASHER



M114915 10/11/24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Wednesday, October 13, 2010 9:04:08 AM

Page 9

Work Order ID: 62908

Parent Item: D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 10/13/2010

Required Date: 10/22/2010

Start Qty: 1.00

Required Qty: 1.00

D3492-043

Manufactured No

230

Each

35.0000

8

8



Plug Assembly

Location

Loc Qty

Loc Code

FP

2

54682

2

FP013

33

59117

1

59190

4

61842

28

362663

x8

AN3C6A

Purchased

No

230

Each

261.0000

4



BOLT

Location

Loc Qty

Loc Code

ST351

261

111982

261

MS21043-6

Purchased

No

230

Each

634.0000

4



NUT

Location

Loc Qty

Loc Code

ST301

634

112314

634

D3493-1

Manufactured

No

250

Each

44.0000

2



Washer

Location

Loc Qty

Loc Code

ST062

40

61672

40

ST065

4

60873

4

Wednesday, October 13, 2010 9:04:08 AM

Shop Packet Print

Page 9

W/O: 62908		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
10/11/24	230	Assemble D3492-043 Plug with "O" Rings NAS 1611-013 / M115584	M	10/11/24	X8		

Part No: D350-636-015 PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Wednesday, October 13, 2010 9:04:08 AM

Page 10

Work Order ID: 62908

Parent Item: D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 10/13/2010

Required Date: 10/22/2010

Start Qty: 1.00

Required Qty: 1.00

MS21083C8

Purchased

No

250

Each

99.0000

1

2



NUT

Location

Loc Qty

Loc Code

ST303

99

113845

5

114934

3

115594

41

115884

50

AN8C21A

Purchased

No

250

Each

53.0000

2

2



BOLT

Location

Loc Qty

Loc Code

ST345

53

113558

1

114653

12

115723

40

D2741

Manufactured

No

250

Each

35.0000

1

1



Blade, 350 Skidtube

Location

Loc Qty

Loc Code

ST466

35

60210

35

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D4168-041	350 SKIDTUBE ASSEMBLY, LH
	X			D4168-042	350 SKIDTUBE ASSEMBLY, RH
		X		D4168-043	350 SKIDTUBE ASSEMBLY, LH
			X	D4168-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
8	8	8	8	D3631-1	WASHER
7	7	7	7	D3873-1	BUSHING
1	1	1	1	D4154-041	WEARPLATE ASSEMBLY
1				D4168-1	SKIDTUBE WELDMENT, LH
	1			D4168-2	SKIDTUBE WELDMENT, RH
		1		D4168-3	SKIDTUBE WELDMENT, LH
			1	D4168-4	SKIDTUBE WELDMENT, RH
4	4	4	4	D4170-1	SPACER
1	1	1	1	D4171-1	BUSHING
4	4	4	4	ALS4-1032-225	INSERT
4	4	4	4	AN3C6A	BOLT
1	1	1	1	AN3C34A	BOLT
4	4	4	4	AN3C36A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
9	9	9	9	AN960C10	WASHER (OR NAS1149C0363R)
4	4	4	4	AN960C10L	WASHER (OR NAS1149C0332R)
1	1	1	1	AN960C816L	WASHER (OR NAS1149C0832R)
5	5	5	5	MS21043-3	NUT
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

GENERAL NOTES:

- MATERIAL: MAKE D4168-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- FINISH:
CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED
- BREAK SHARP EDGES: N/A
- IDENTIFICATION: N/A
- WEIGHT: D4168-041/-042/-043/-044 = 32.3 LBS
- WELD PER DART QSI 004
- FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
MINIMUM YIELD TENSILE STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
- POWDER COATING WITH MEK DEGREASER.
- SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

SHOWN BY
REF. TO
ENGINEERING
UNCONTROLLED
SUBJECT TO
WITH
WORK
NO. 62908
BS10-10-03

RELEASED
2010-09-15

A	NEW ISSUE	SC	10.08.09
REV.	DESCRIPTION	BY	DATE
DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 1 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	10.08.09	COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

Dart Aerospace Ltd

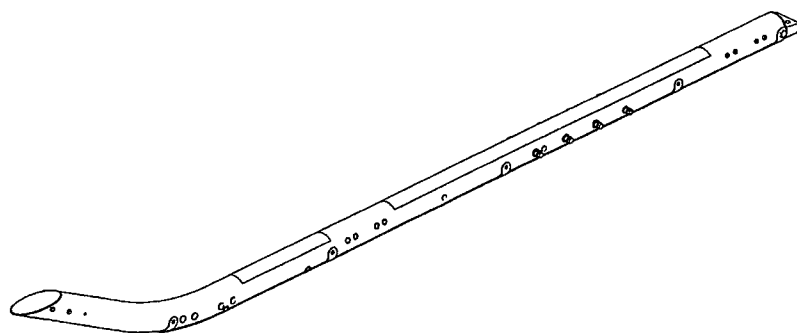
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

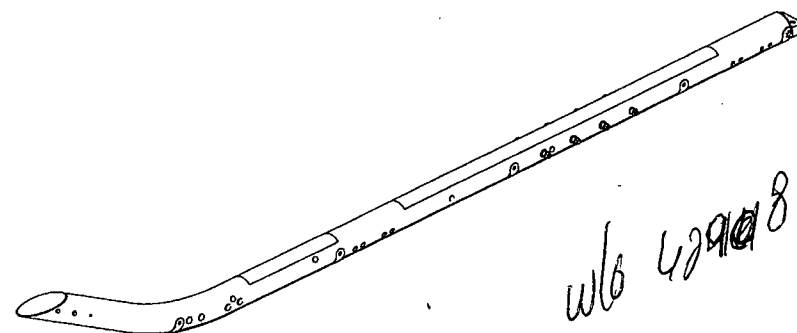
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D4168-041 350 SKIDTUBE ASSEMBLY, LH



w/b 42908

D4168-042 350 SKIDTUBE ASSEMBLY, RH

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2010-09-15
JAM

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DRAWN	SC	PORT HADLOCK, WA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	D4168	SHEET 2 OF 11
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	350 SKIDTUBE ASSEMBLY	NTS
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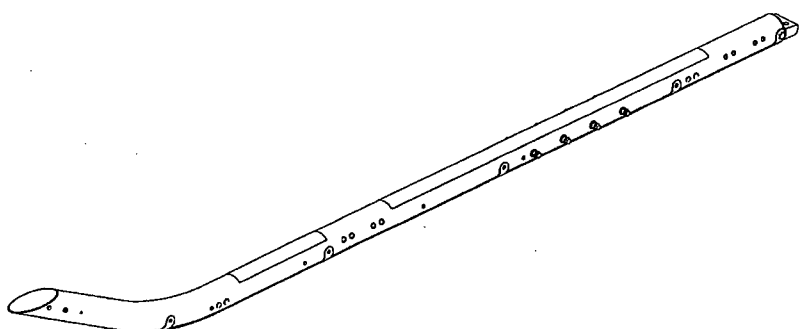
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

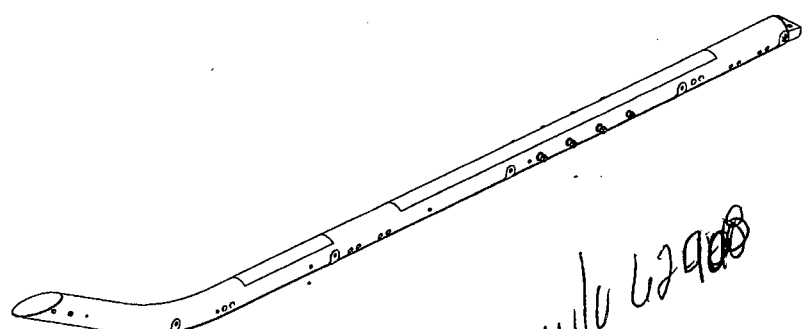
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D4168-043 350 SKIDTUBE ASSEMBLY, LH



D4168-044 350 SKIDTUBE ASSEMBLY, RH

WLB 62900

RELEASED
2010-09-15

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DRAWN	SC	PORT HADLOCK, WA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	D4168	SHEET 3 OF 11
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
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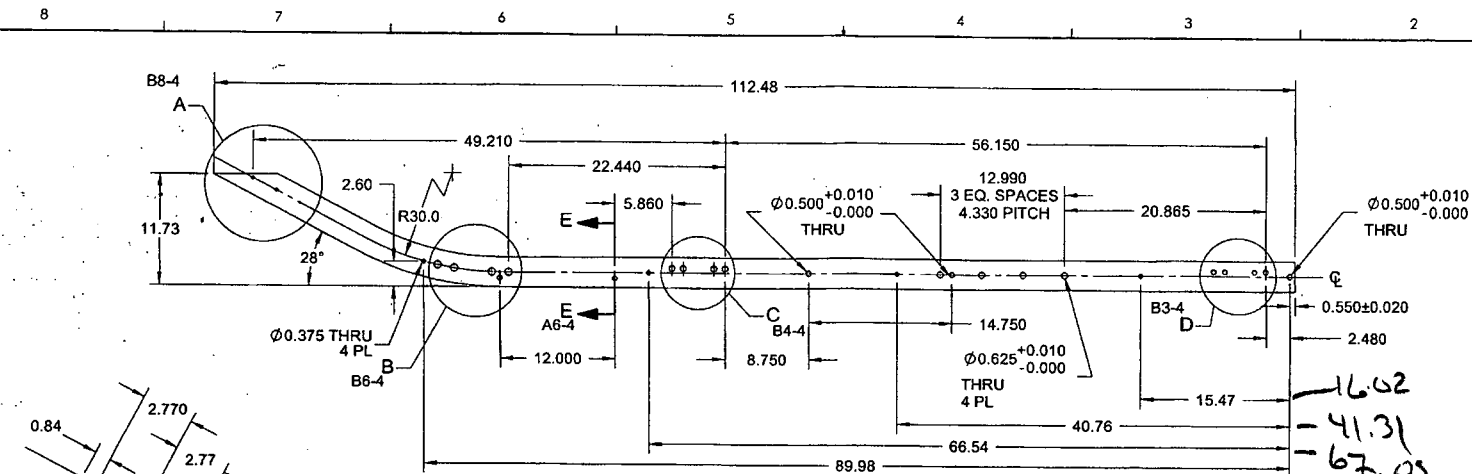
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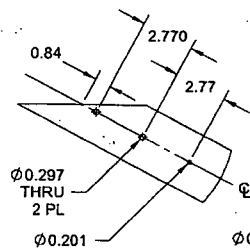
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

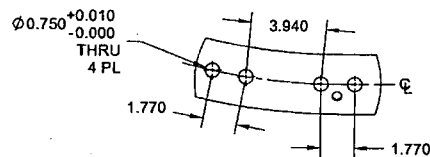
NOTE: Date & initial all entries



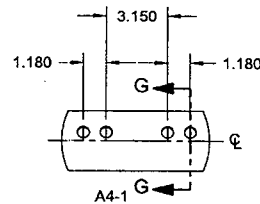
D4168-1 LH SKIDTUBE



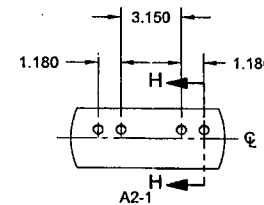
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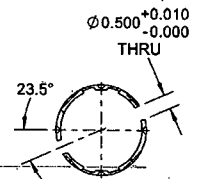
DETAIL B
SCALE 2X



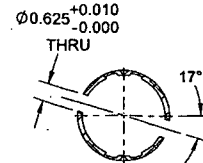
DETAIL C
SCALE 2X



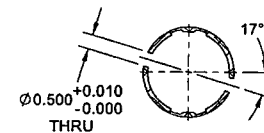
DETAIL D
SCALE 2X






SECTION E-E
SCALE 3X, 2 PL



SECTION G-G
SCALE 3X, 4 PL



SECTION H-H
SCALE 3X, 4 PL

DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED	SC	DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 4 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	10.08.09	COPYRIGHT © 2010 BY DART AEROSPACE USA, INC.	
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RELEASED
2010-09-15

*w/c 629988
62908*

*16.02
-41.31
-67.03
90.53*

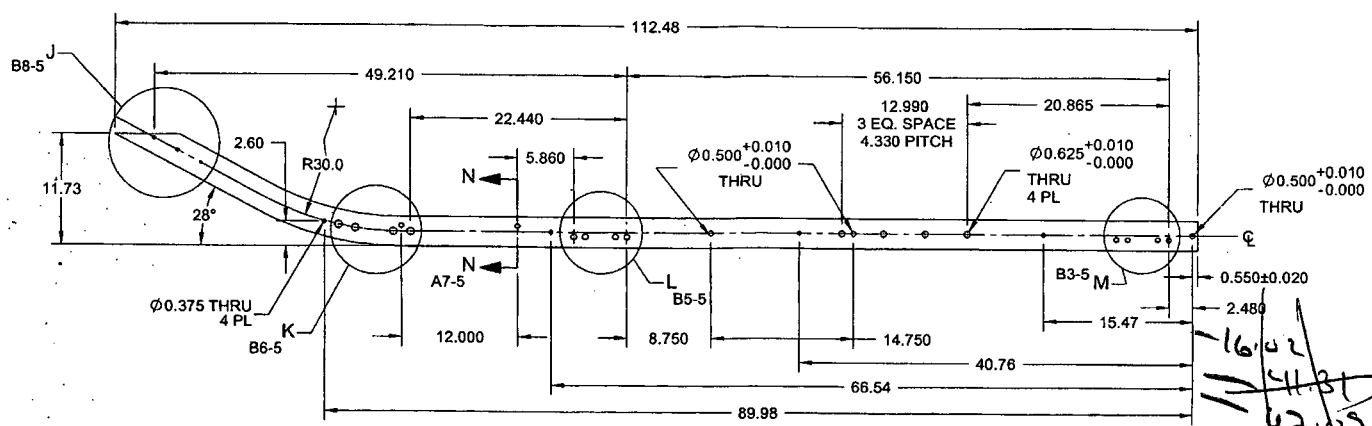
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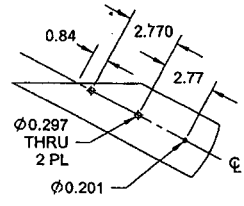
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

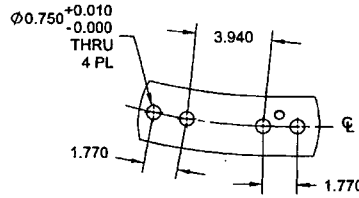
NOTE: Date & initial all entries



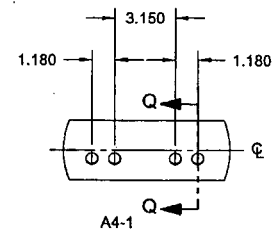
D4168-2 RH SKIDTUBE



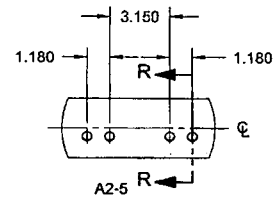
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SCALE 2X



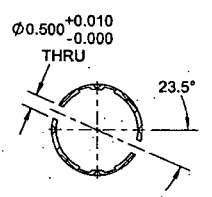
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SCALE 2X



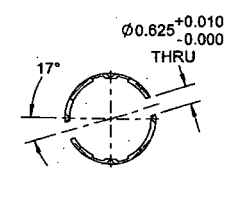
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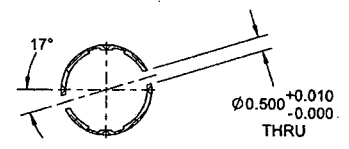
DETAIL M
SCALE 2X



SECTION N-N
SCALE 3X, 2 PL



SECTION Q-Q
SCALE 3X, 4 PL



SECTION R-R
SCALE 3X, 4 PL

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2010-09-15
MD

DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED	OP	DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 5 OF 11
APPROVED	WDP	TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
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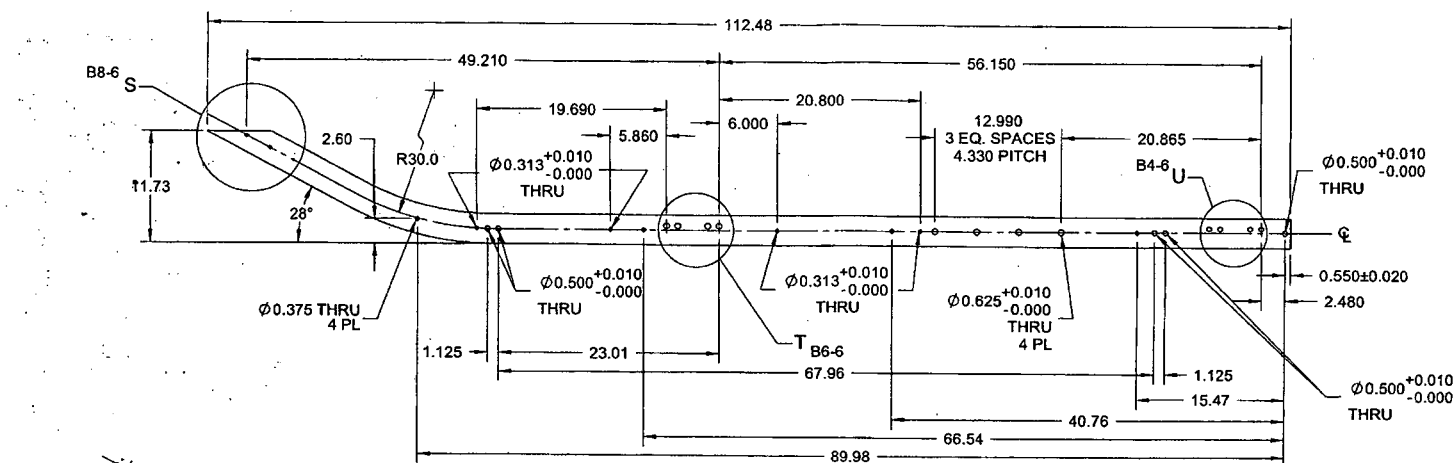
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

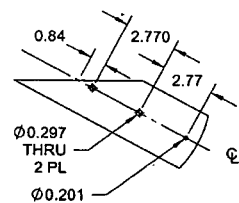
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

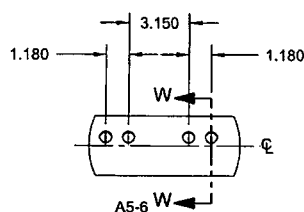
NOTE: Date & initial all entries



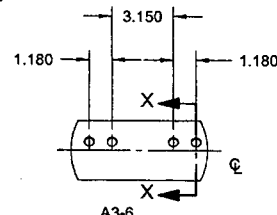
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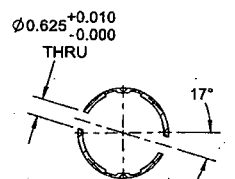
DETAIL S
SCALE 2X



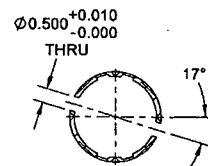
DETAIL T
SCALE 2X



DETAIL U
SCALE 2X



SECTION W-W
SCALE 3X, 4 PL



SECTION X-X
SCALE 3X, 4 PL

W 62900

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MFG. APPR.		D4168	SHEET 6 OF 11
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

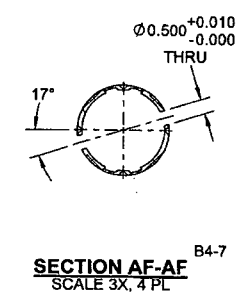
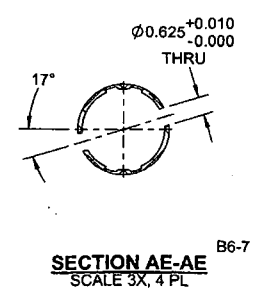
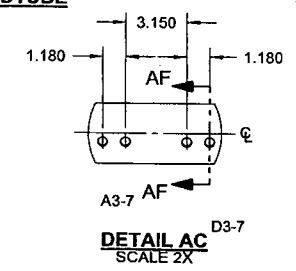
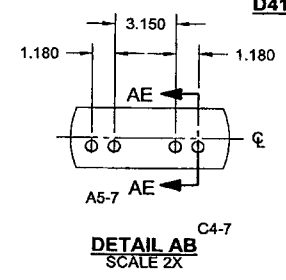
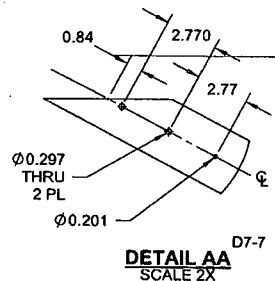
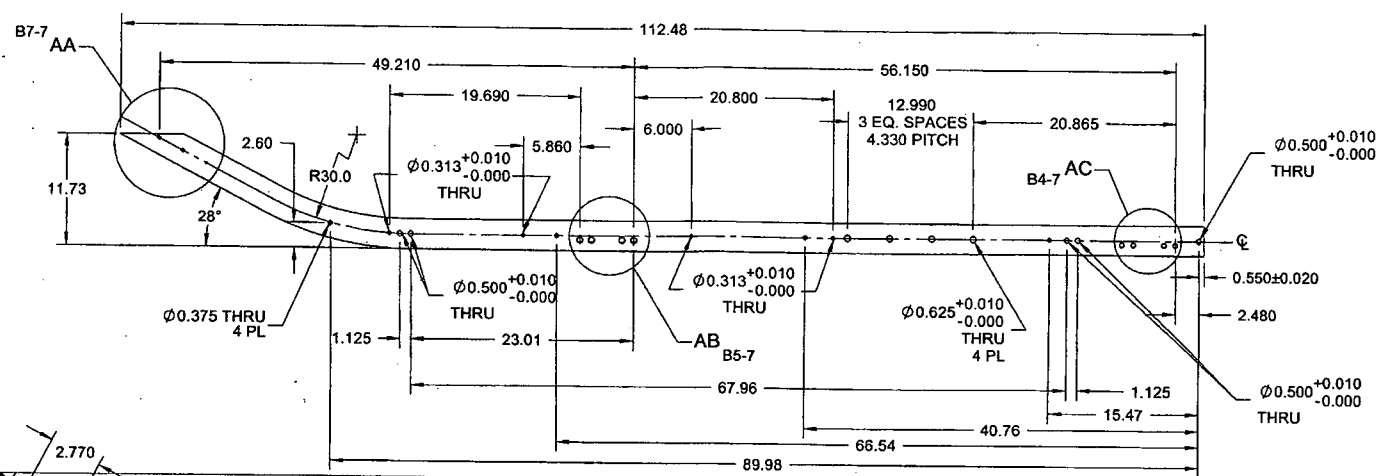
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8 7 6 5 4 3 2 1



w/642900

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MFG. APPR.	<i>[Signature]</i>	D4168	SHEET 7 OF 11
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DE APPR.	<i>[Signature]</i>	350 SKIDTUBE ASSEMBLY	NTS
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8 7 6 5 4 3 2 1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

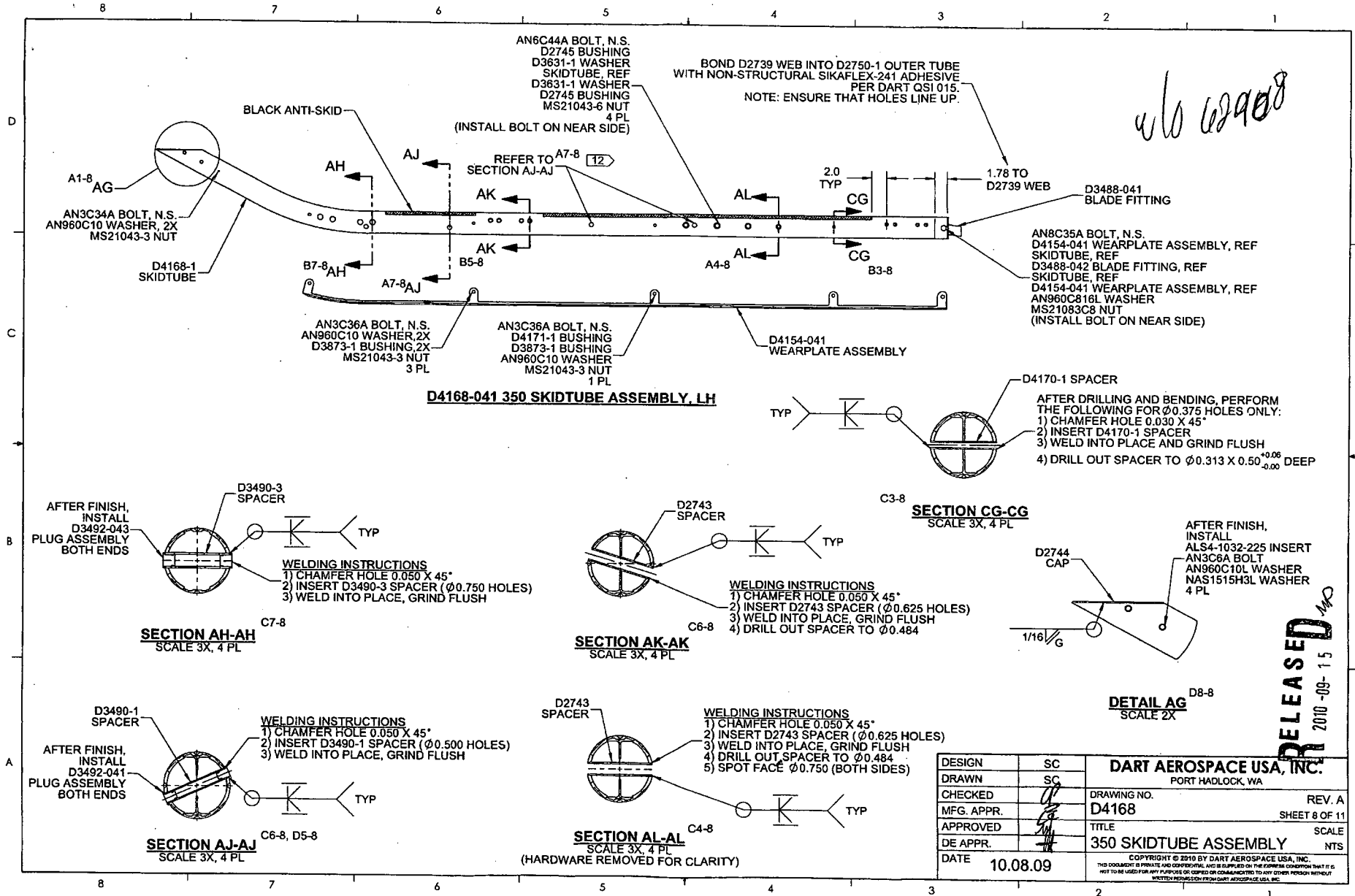
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

WLB 62908



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MFG. APPR.		REV. A
APPROVED		SHEET 8 OF 11
DE APPR.		TITLE 350 SKIDTUBE ASSEMBLY
DATE 10.08.09		SCALE NTS

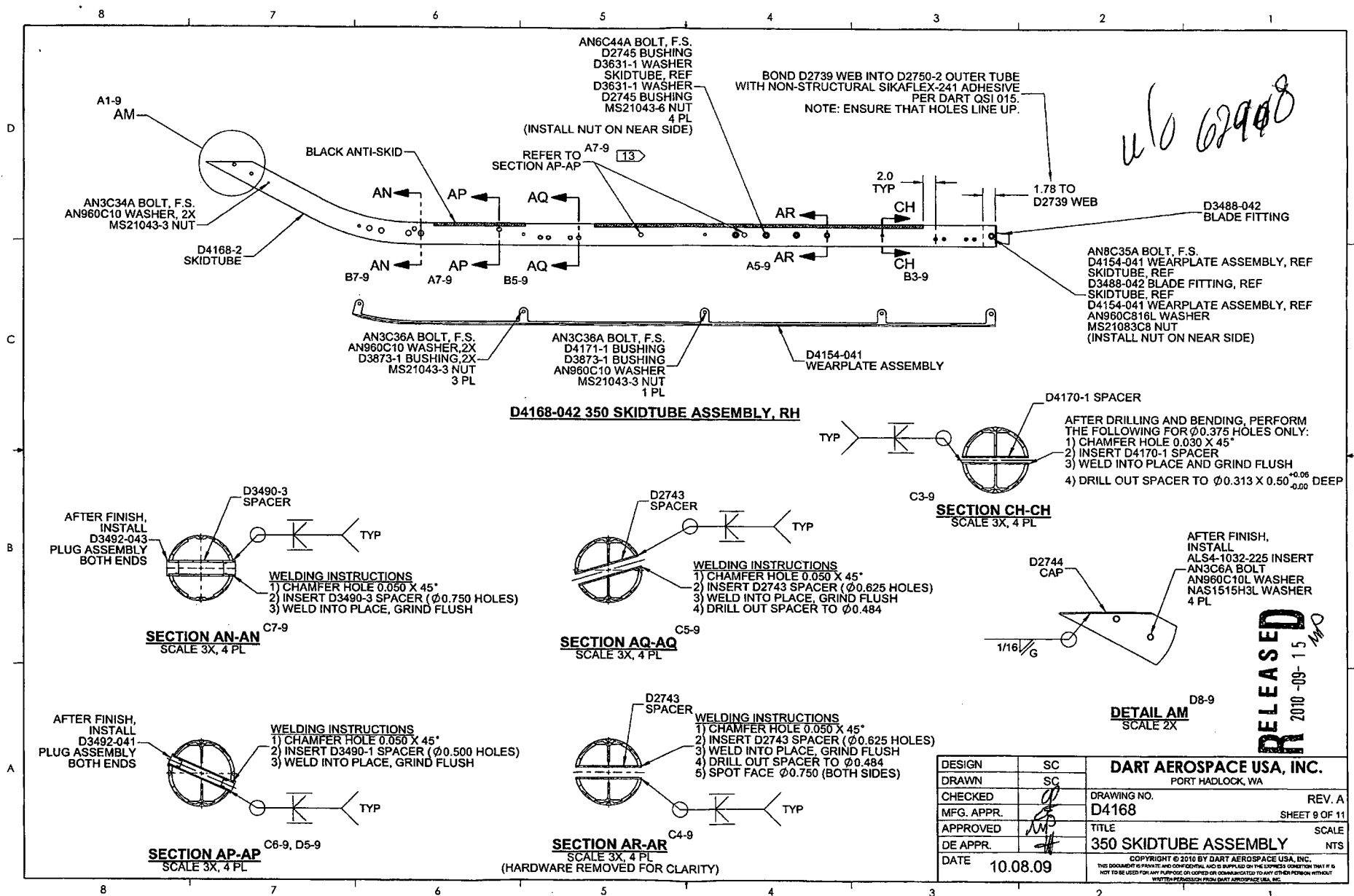
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



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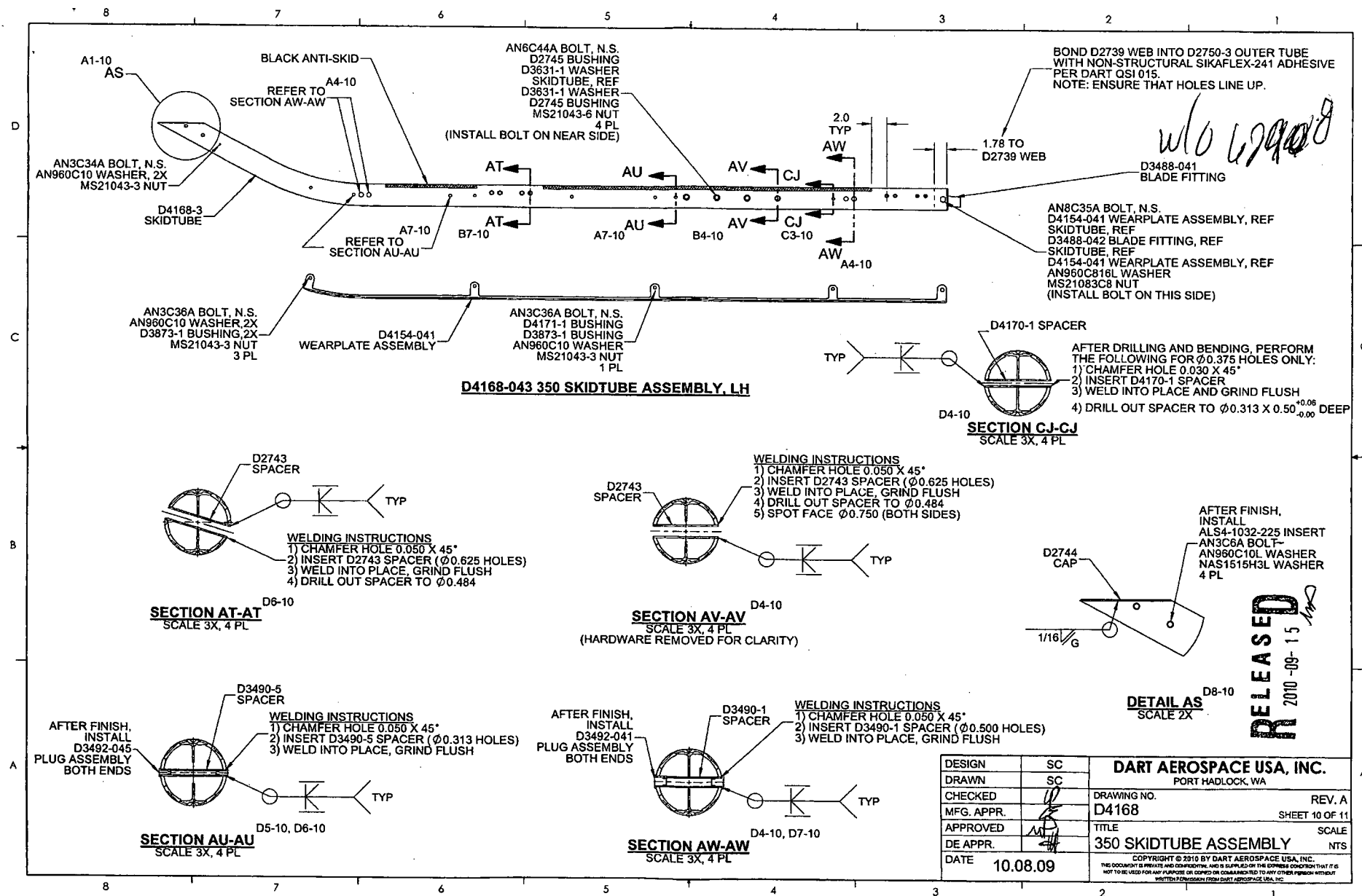
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

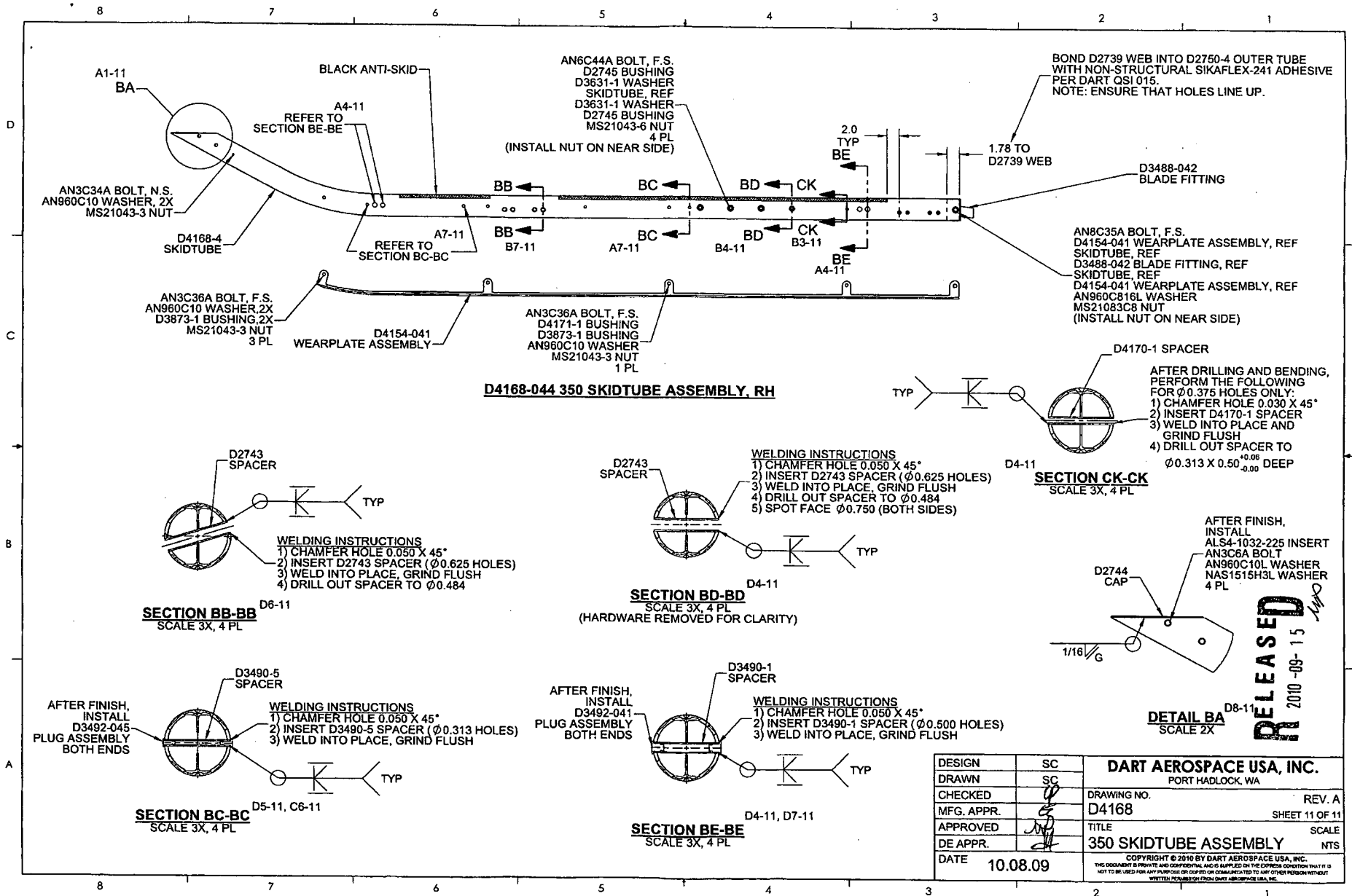
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

WLO 42408



DESIGN	SC	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
DRAWN	SC		
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 11 OF 11
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2010-09-15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8.0 PARTS LIST (D350-636-015/-016/-017/-018/-047 KITS)

Item	Qty -015	Qty -016	Qty -017	Qty -018	Qty -047	Part Number	Description
	X					D350-636-015	SKIDTUBE INSTALLATION, LH, STD AERAZUR/APICAL CYLINDRICAL FLOAT COMPATIBLE W/ TRAINING WEARPLATE
		X				D350-636-016	SKIDTUBE INSTALLATION, RH, STD AERAZUR/APICAL CYLINDRICAL FLOAT COMPATIBLE W/ TRAINING WEARPLATE
			X			D350-636-017	SKIDTUBE INSTALLATION, LH AIRCROUSER/ APICAL TRI-BAG FLOAT COMPATIBLE W/ TRAINING WEARPLATE
				X		D350-636-018	SKIDTUBE INSTALLATION, RH AIRCROUSER/ APICAL TRI-BAG FLOAT COMPATIBLE W/ TRAINING WEARPLATE
					X	D350-636-047	TRAINING WEARPLATE KIT (LH/RH)
1	1					D4168-041	SKIDTUBE ASSEMBLY, LH
1		1				D4168-042	SKIDTUBE ASSEMBLY, RH
1			1			D4168-043	SKIDTUBE ASSEMBLY, LH
1				1		D4168-044	SKIDTUBE ASSEMBLY, RH
*1	1					D4168-1	SKIDTUBE WELDMENT, LH
*1		1				D4168-2	SKIDTUBE WELDMENT, RH
*1			1			D4168-3	SKIDTUBE WELDMENT, LH
*1				1		D4168-4	SKIDTUBE WELDMENT, RH
**2	8	8	8	8		350A41-1027-20	SCREW
**3	8	8	8	8		23119AG120LE	WASHER
**4	8	8	8	8		22541N120	NUT
*5	1	1	1	1		AN8C35A	BOLT
*6A	1	1	1	1		AN960C816L	WASHER (OR NAS1149CO832R)
*7	1	1	1	1		MS21083C8	NUT
*8	1		1			D3488-041	BLADE FITTING, LH
*8		1		1		D3488-042	BLADE FITTING, RH
9	1	1	1	1		D2741	BLADE
10	2	2	2	2		AN8C21A	BOLT
11	2	2	2	2		AN960JD816	WASHER (OR NAS1149CO863J)
12	2	2	2	2		MS21083C8	NUT
*14	4	4	4	4		AN6C44A	BOLT
*15	8	8	8	8		D2745	BUSHING
*16	4	4	4	4		MS21043-6	NUT
*17	8	8	8	8		D3631-1	WASHER
*18	4	4	4	4		ALS4-1032-225	INSERT
*19	4	4	4	4		AN3C6A	BOLT
*20A	4	4	4	4		AN960C10L	WASHER (OR NAS1149CO332R)
*20B	4	4	4	4		NAS1515H3L	WASHER
*30	8	8	8	8		D3492-041	PLUG ASSEMBLY
*31	8	8				D3492-043	PLUG ASSEMBLY
*32			8	8		D3492-045	PLUG ASSEMBLY

(CONTINUED ON NEXT PAGE)

(CONTINUED FROM PREVIOUS PAGE)

Item	Qty -015	Qty -016	Qty -017	Qty -018	Qty -047	Part Number	Description
***43	2	2	2	2		D3493-1	WASHER
*90	1	1	1	1	1	D4154-041	WEARPLATE ASSEMBLY
*91A	4	4	4	4	4	AN3C36A	BOLT ¹
91B	1	1	1	1	1	AN3C37A	BOLT ²
91C	1	1	1	1	1	AN3C42A	BOLT ³
*92	7	7	7	7	8	AN960C10	WASHER (OR NAS1149CO363R)
92A			1	1		AN960C10	WASHER (OR NAS1149CO363R) ³
*93	4	4	4	4	4	MS21043-3	NUT
*94	7	7	7	7	8	D3873-1	BUSHING
94A			1	1		D3873-1	BUSHING ³
*95	1	1	1	1	1	D4171-1	BUSHING ⁴
*96	4	4	4	4	4	D4170-1	SPACER
*97	1	1	1	1	1	AN3C34A	BOLT
*98	2	2	2	2	2	AN960C10	WASHER (OR NAS1149CO363R)
*99	1	1	1	1	1	MS21043-3	NUT

* PART OF D4168-041/-042/-043/-044

** TO BE SUPPLIED BY CUSTOMER

*** ONLY INSTALLED IF INSTALLING AN APICAL FLOAT SYSTEM

¹ QTY USED MAY BE LESS ON SKIDTUBES WITH APICAL CYLINDRICAL OR TRI-BAG FLOATS² HARDWARE USED ON THE SKIDTUBES INSTALLED WITH APICAL CYLINDRICAL BAG FLOATS³ HARDWARE USED ON THE SKIDTUBES INSTALLED WITH APICAL TRI-BAG FLOATS⁴ HARDWARE NOT USED ON THE SKIDTUBES INSTALLED WITH APICAL TRI-BAG FLOATS

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Revision: H
Date: 10.07.26

NO. 239

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 61946 61914
Part number: D350.636.012
Description: 350 skid
Welding Process: Tig[☒] Mig[]
Base material: Aluminium
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier P.D. Del Date of Test Coupon 10.09.30
Welder Barclay Elliott Date of Test Coupon 10.09.30

The above named individual is qualified in accordance with AWS D17.1.2001 to weld